FIG.1(a) prior art

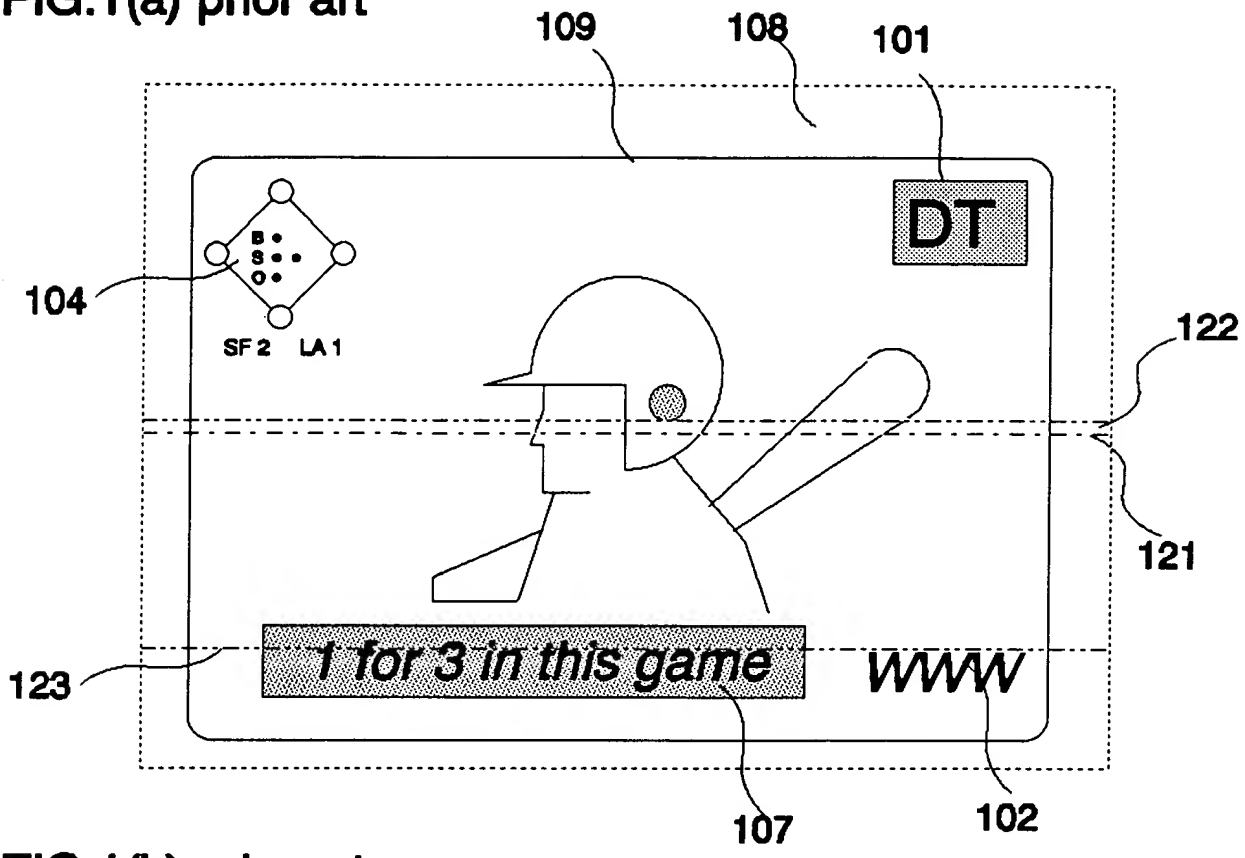


FIG.1(b) prior art

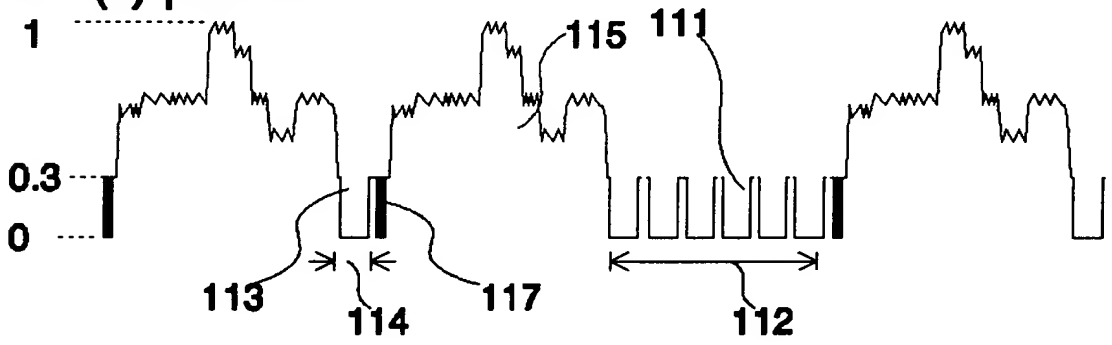


FIG.1(c) prior art

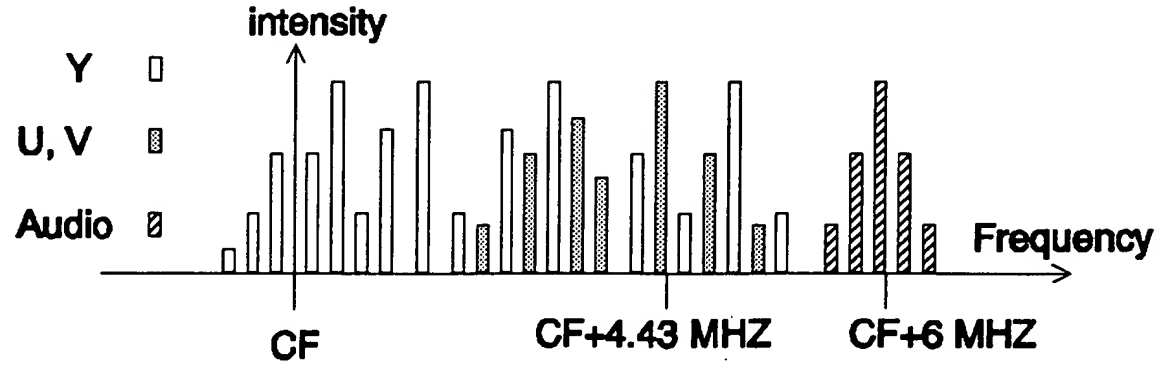


FIG.1(d) prior art

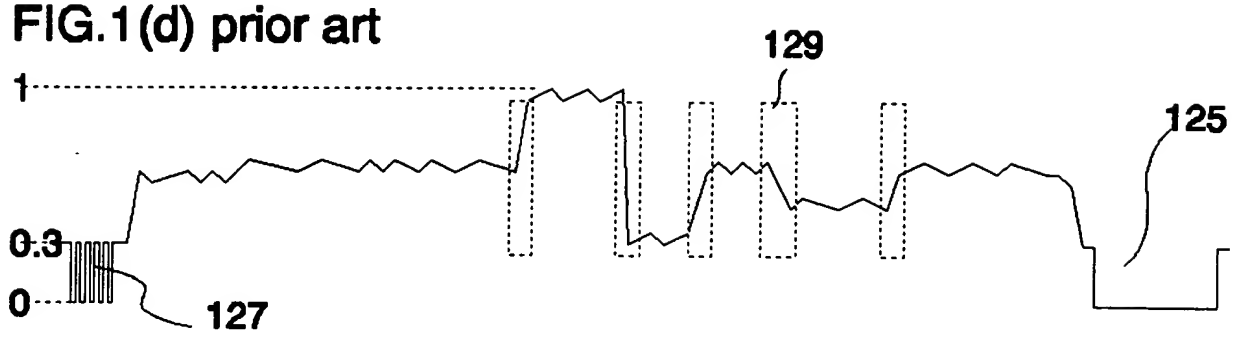


FIG.1(e) prior art

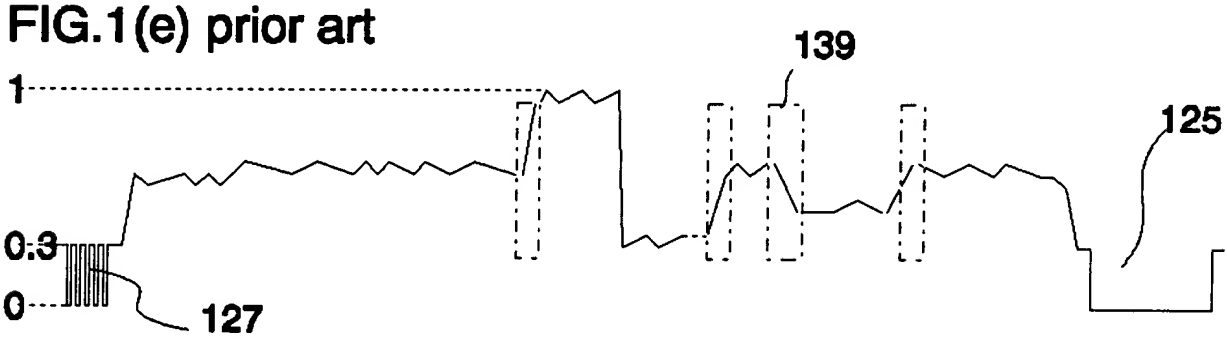


FIG.1(f) prior art

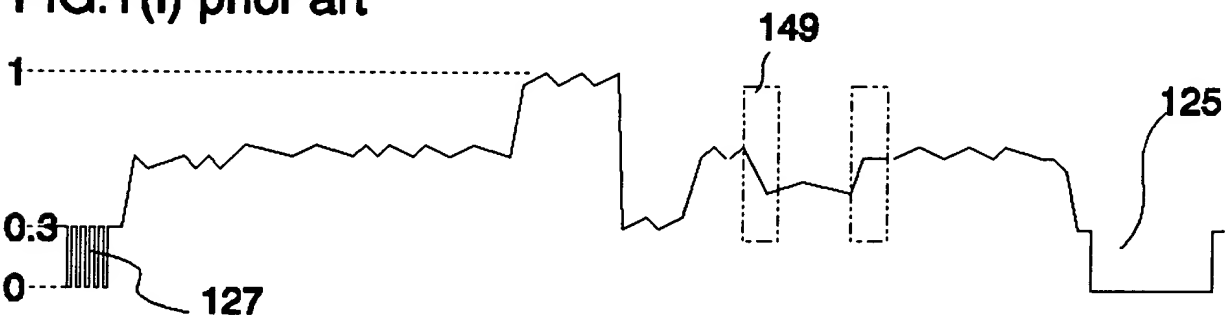


FIG.1(g) prior art

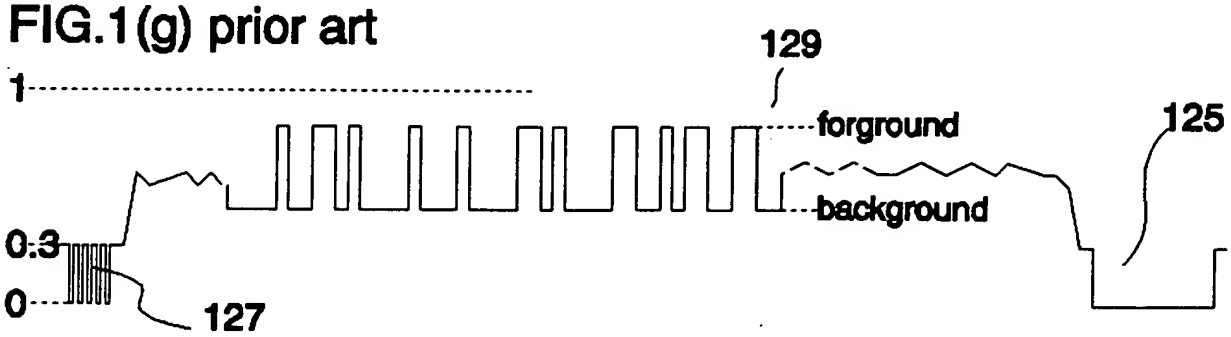


FIG.2(a)

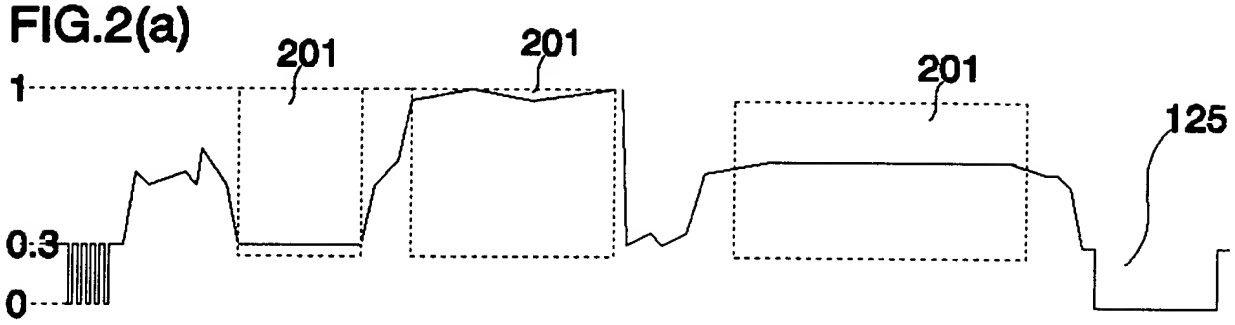


FIG. 2(b)

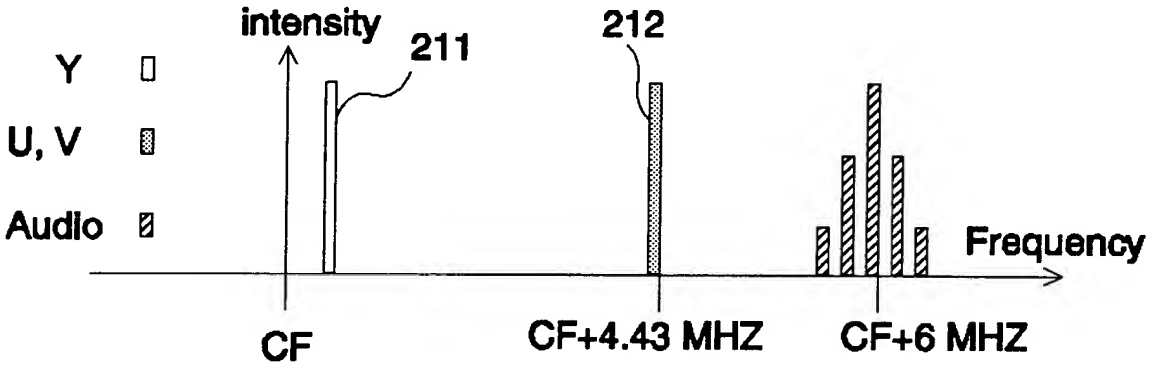


FIG. 2(c)

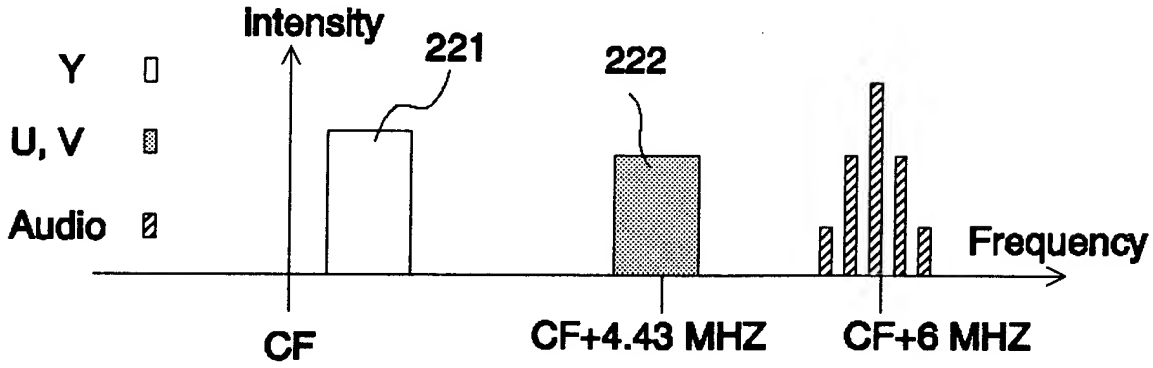


FIG. 2(d)

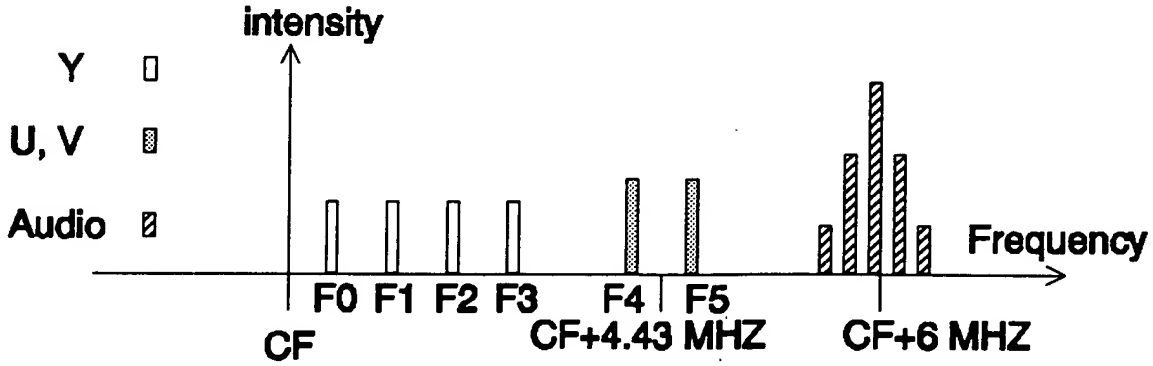


FIG.2(e)

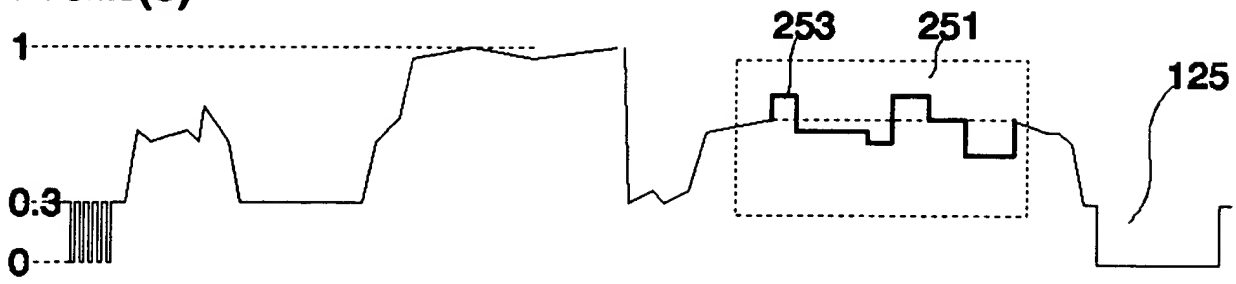


FIG.2(f)

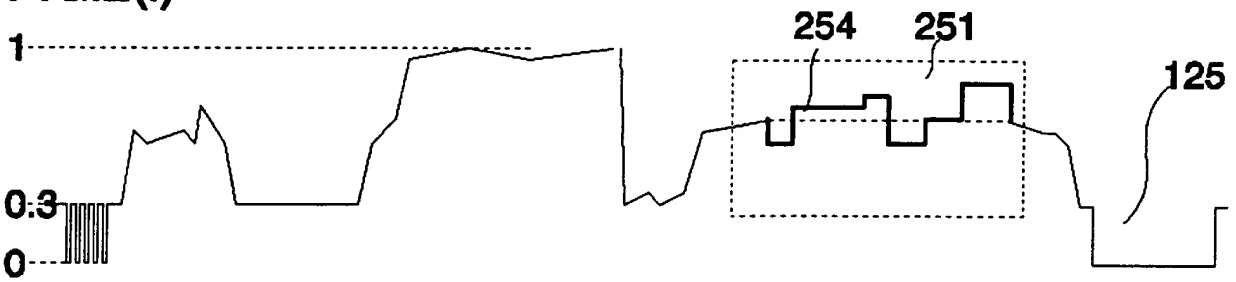


FIG.2(g)

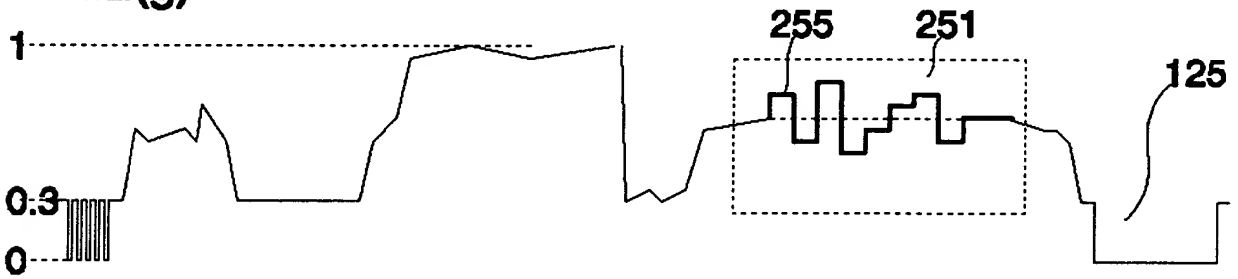


FIG.2(h)

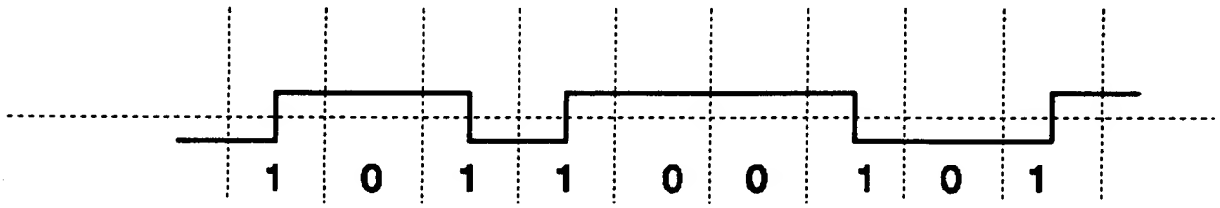


FIG.3(a)

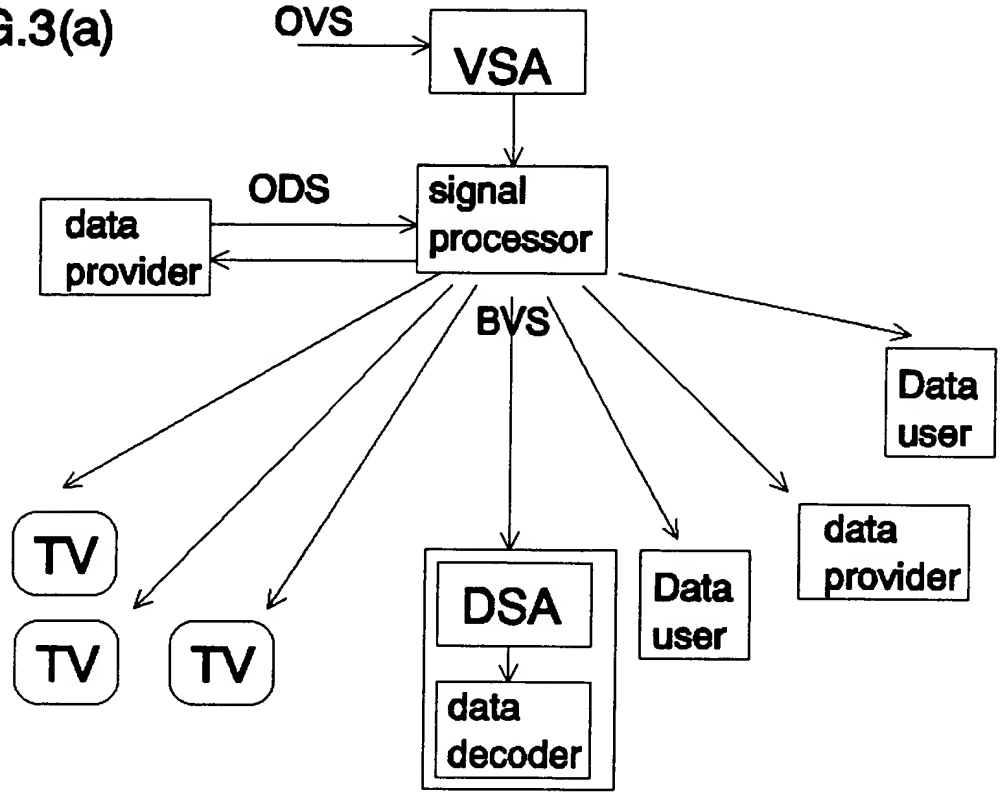


FIG.3(b)

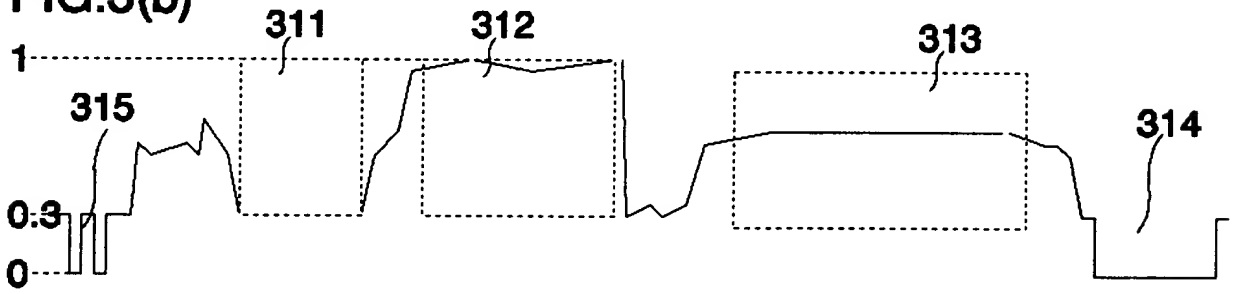


FIG.3(c)

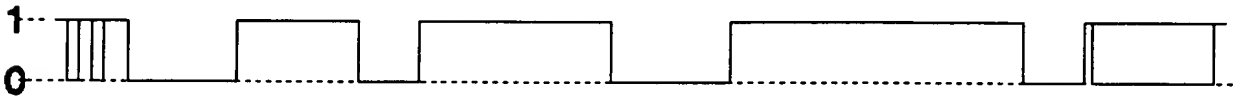


FIG.3(d)

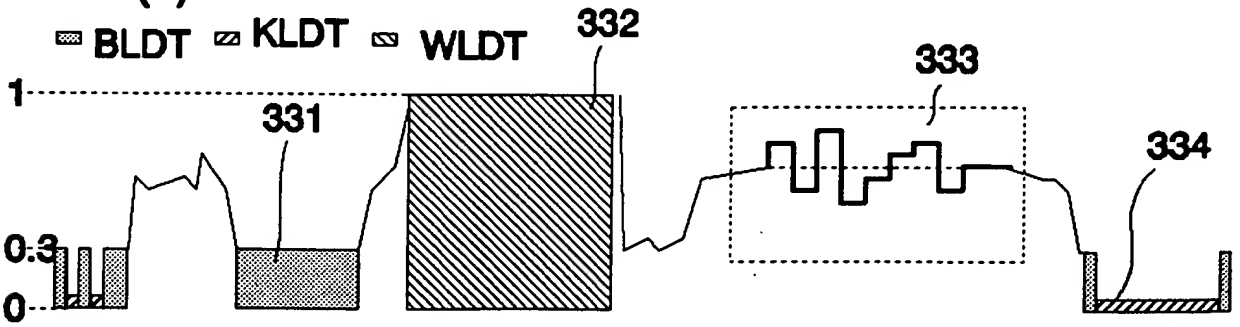


FIG.4(a)

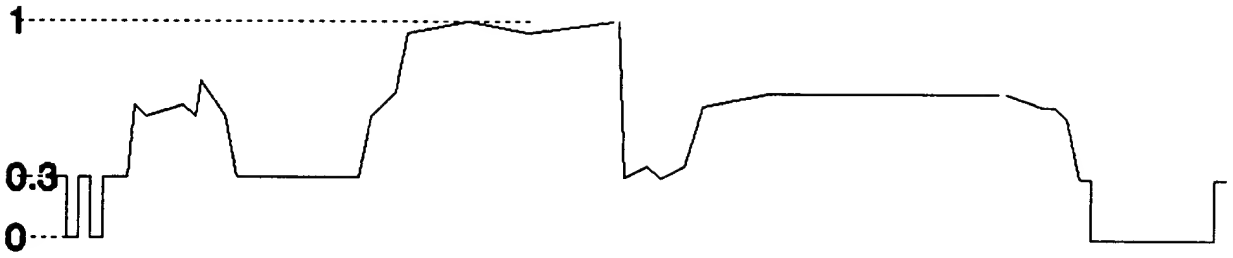


FIG.4(b)

FIG.4(c)

FIG.5(a)

FIG.5(b)

FIG.5(c)

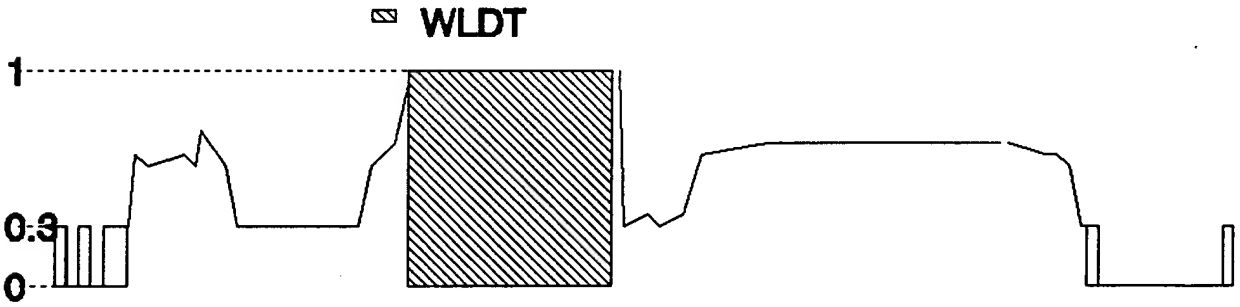


FIG.6(a)

FIG.6(b)

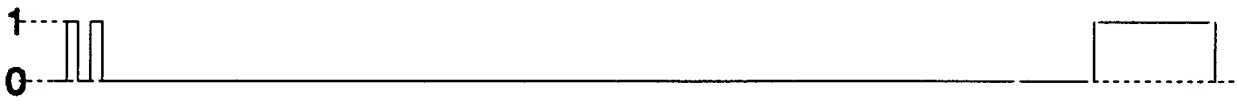


FIG.6(c)

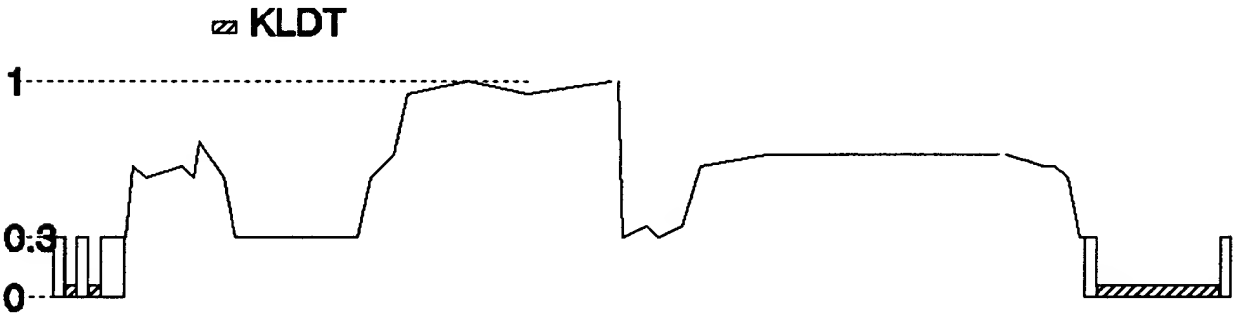


FIG. 7(a)

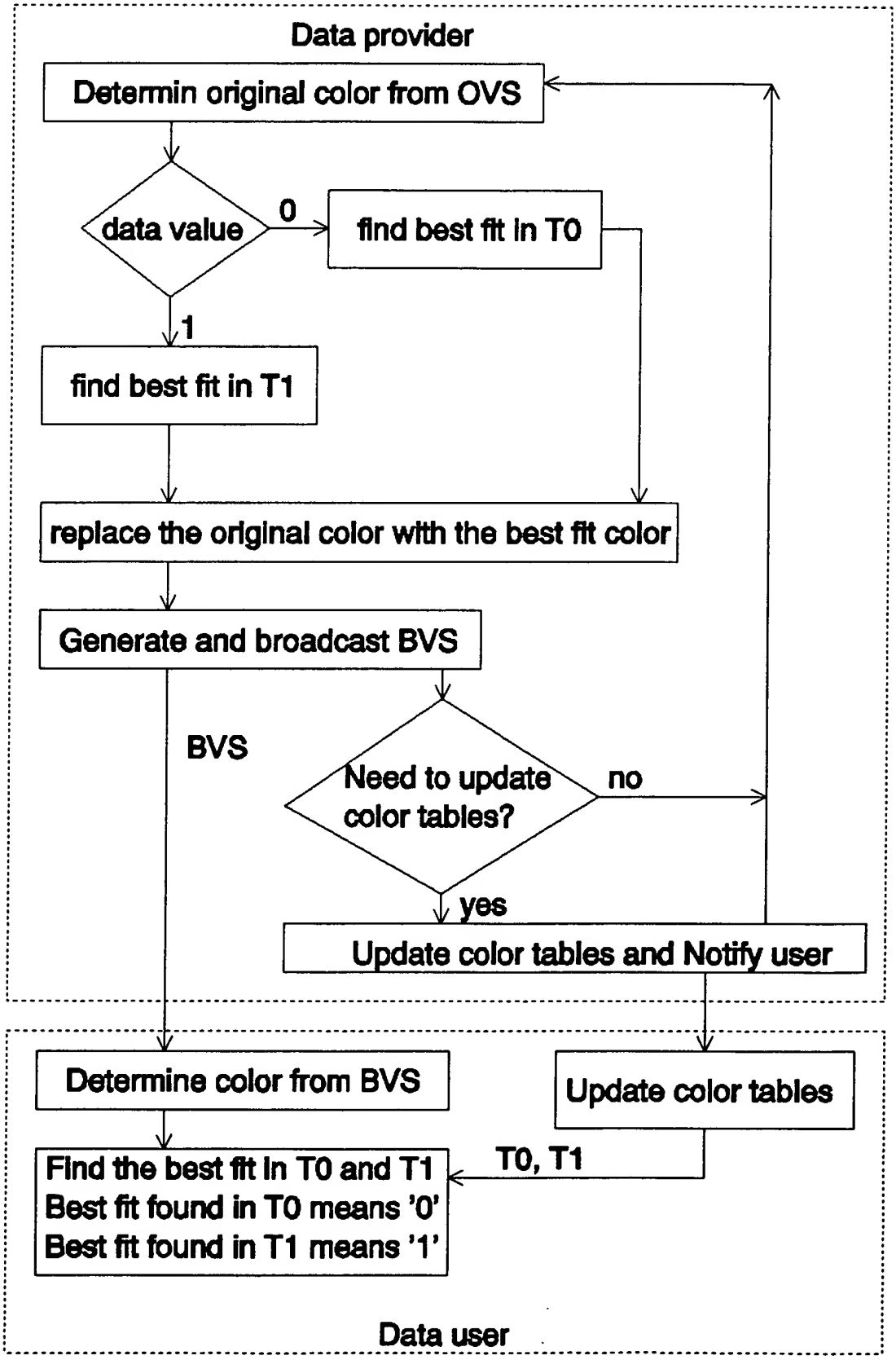

Data provider
Determin original color from OVS
data value
0
find best fit in T0
1
find best fit in T1
replace the original color with the best fit color
Generate and broadcast BVS
BVS
Need to update color tables?
no
yes
Update color tables and Notify user
Determine color from BVS
Update color tables
T0, T1
Find the best fit in T0 and T1
Best fit found in T0 means '0'
Best fit found in T1 means '1'
Data user

FIG. 7(b)

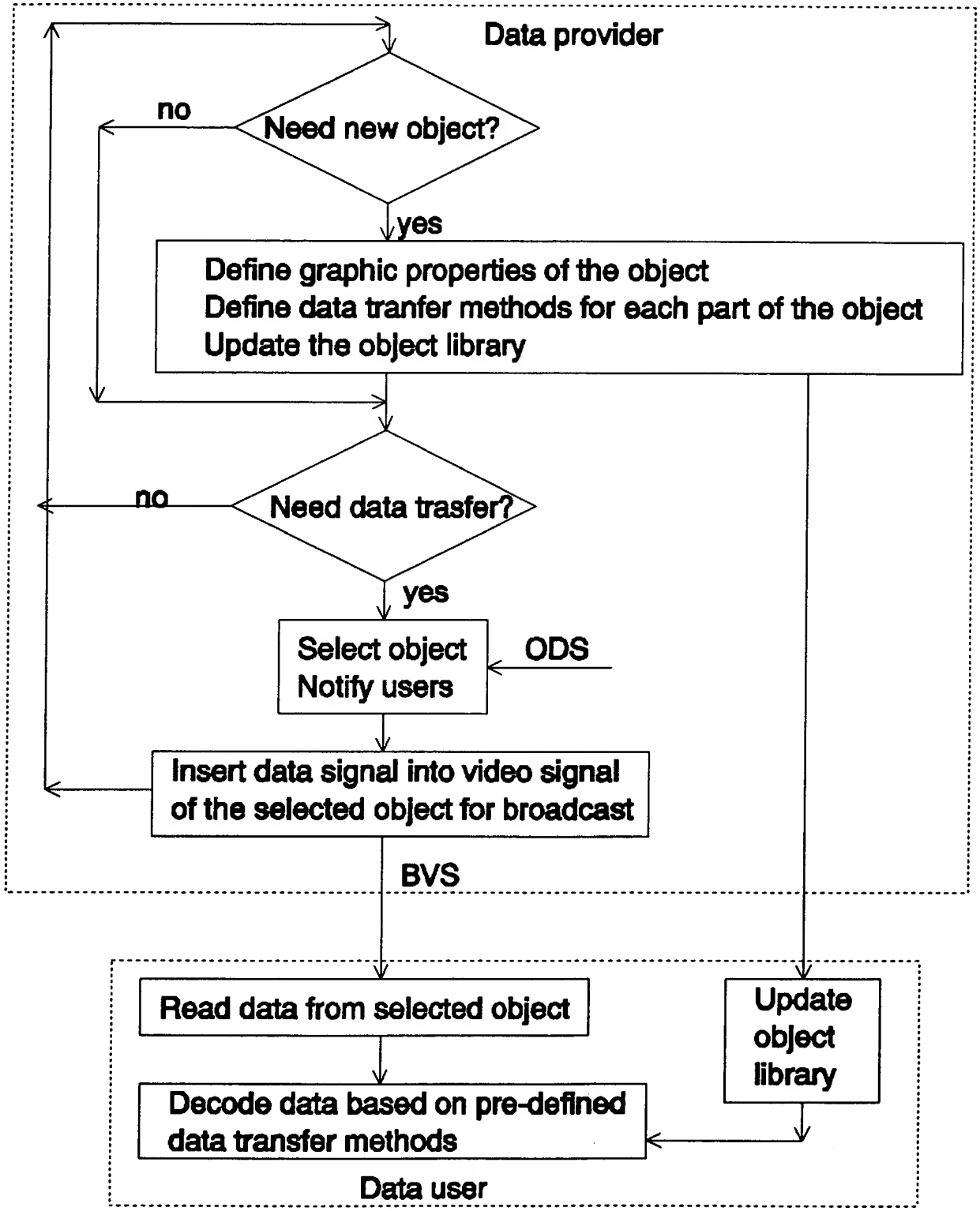

Data provider
Need new object?
no
yes
Define graphic properties of the object
Define data tranfer methods for each part of the object
Update the object library
Need data trasfer?
no
yes
Select object
Notify users
ODS
Insert data signal into video signal
of the selected object for broadcast
BVS
Read data from selected object
Update
object
library
Decode data based on pre-defined
data transfer methods
Data user

FIG. 7(c)

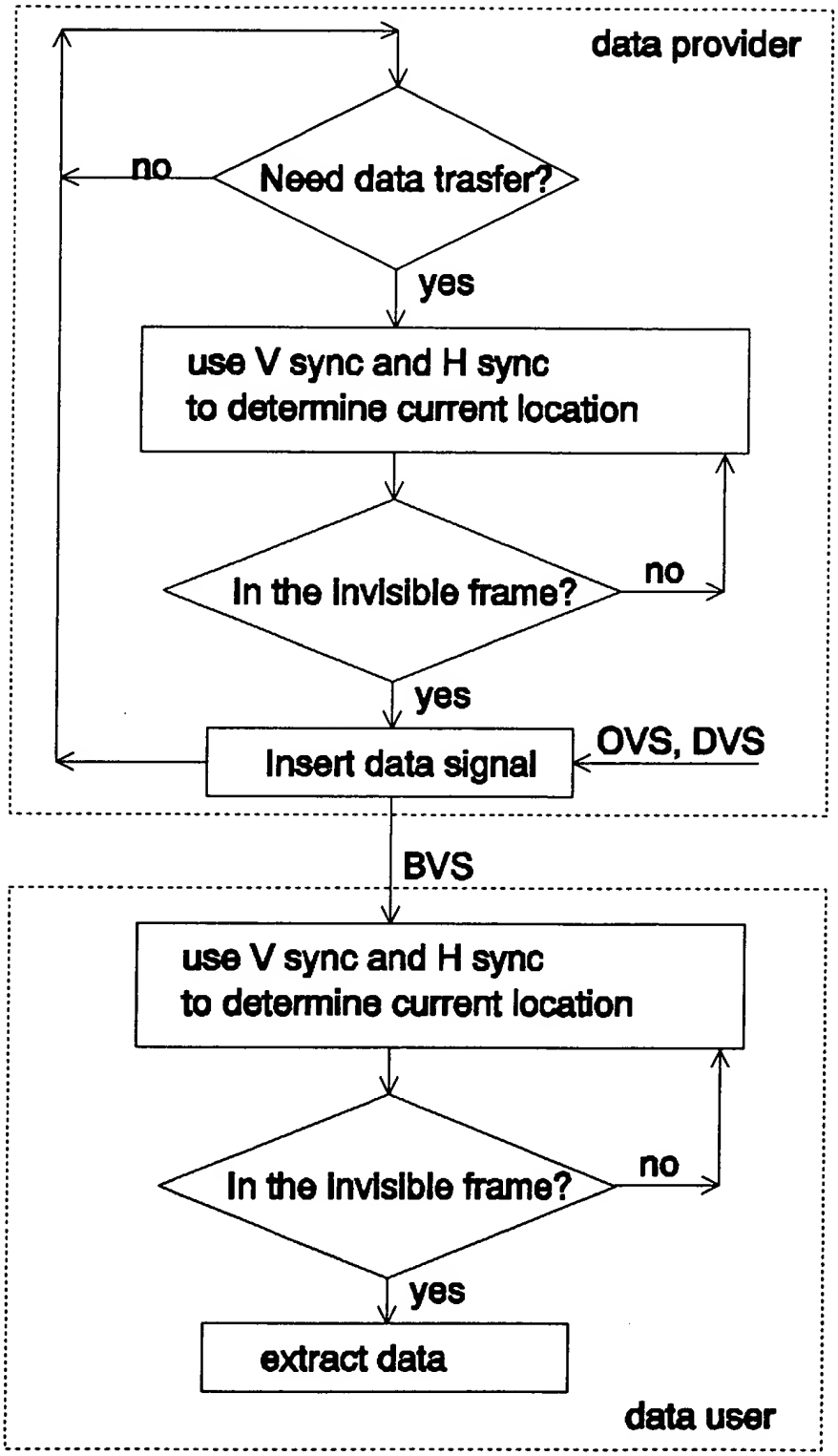

data provider
Need data trasfer?
no
yes
use V sync and H sync
to determine current location
In the invisible frame?
no
yes
Insert data signal
OVS, DVS
BVS
use V sync and H sync
to determine current location
In the invisible frame?
no
yes
extract data
data user

FIG. 8(a)

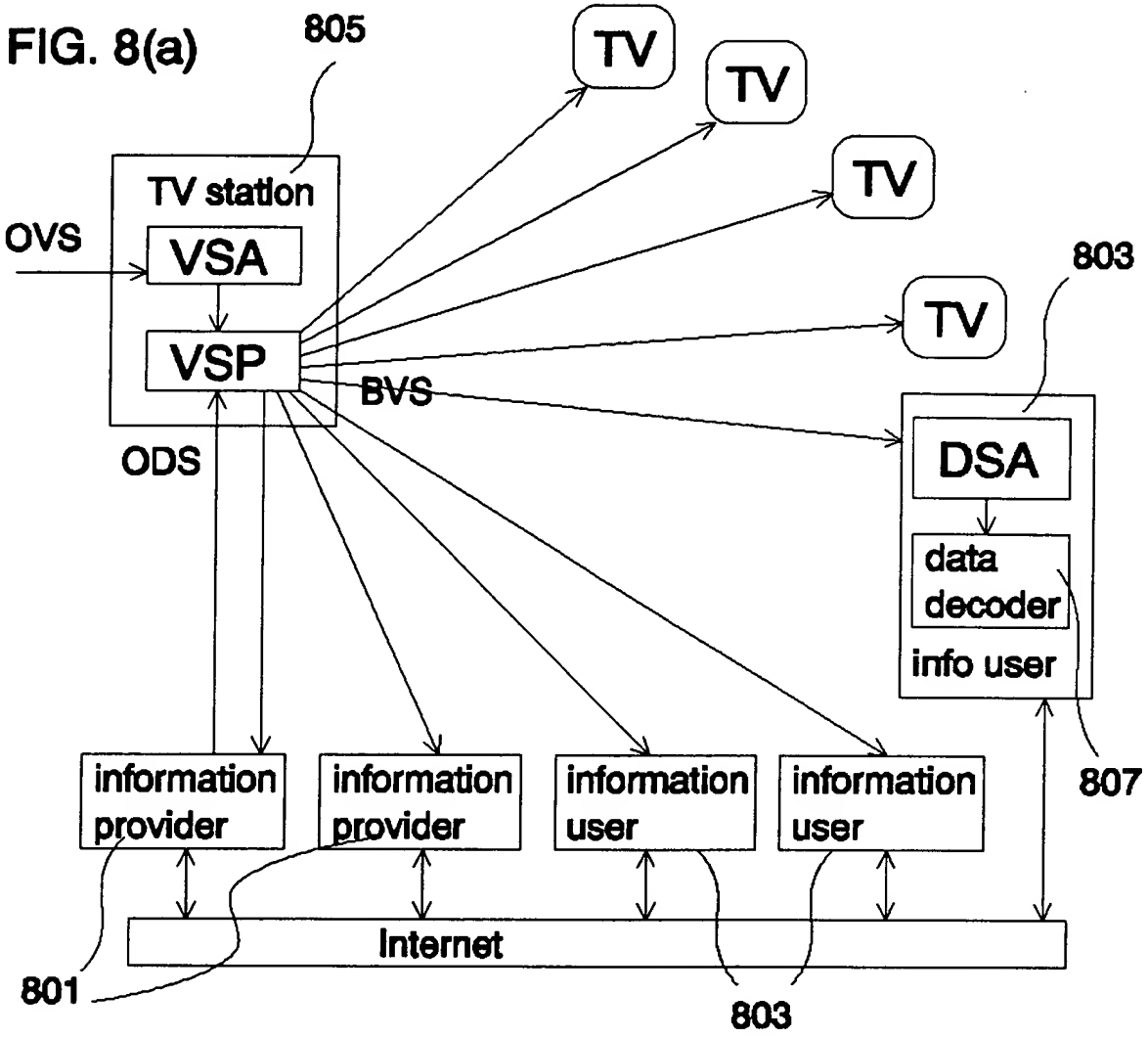

805
TV
TV
TV
TV station
OVS
VSA
VSP
BVS
803
DSA
data decoder
info user
ODS
information provider
information provider
information user
information user
807
Internet
801
803

FIG. 8(b)

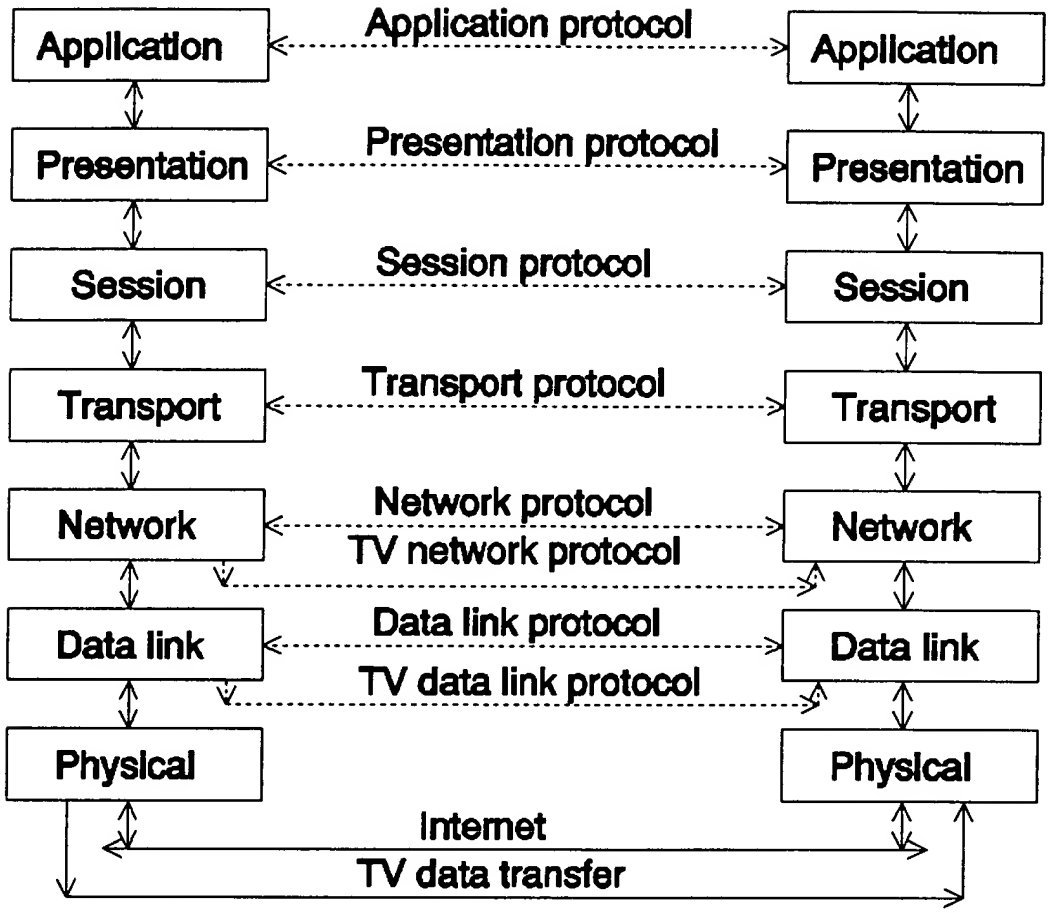

Application
Application protocol
Application
Presentation
Presentation protocol
Presentation
Session
Session protocol
Session
Transport
Transport protocol
Transport
Network
Network protocol
TV network protocol
Network
Data link
Data link protocol
TV data link protocol
Data link
Physical
Physical
Internet
TV data transfer

FIG. 9(a)

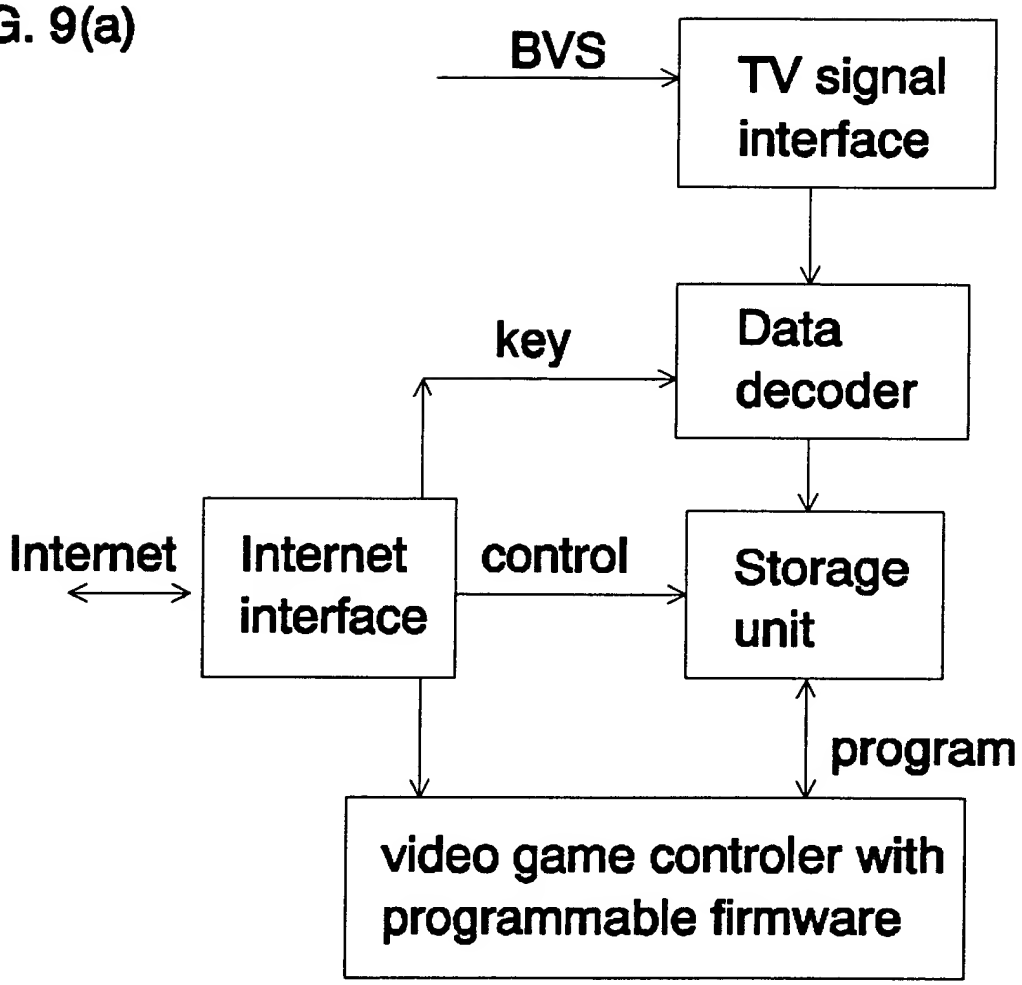

BVS
TV signal interface
key
Data decoder
Internet
Internet interface
control
Storage unit
program
video game controler with programmable firmware

FIG. 9(b)

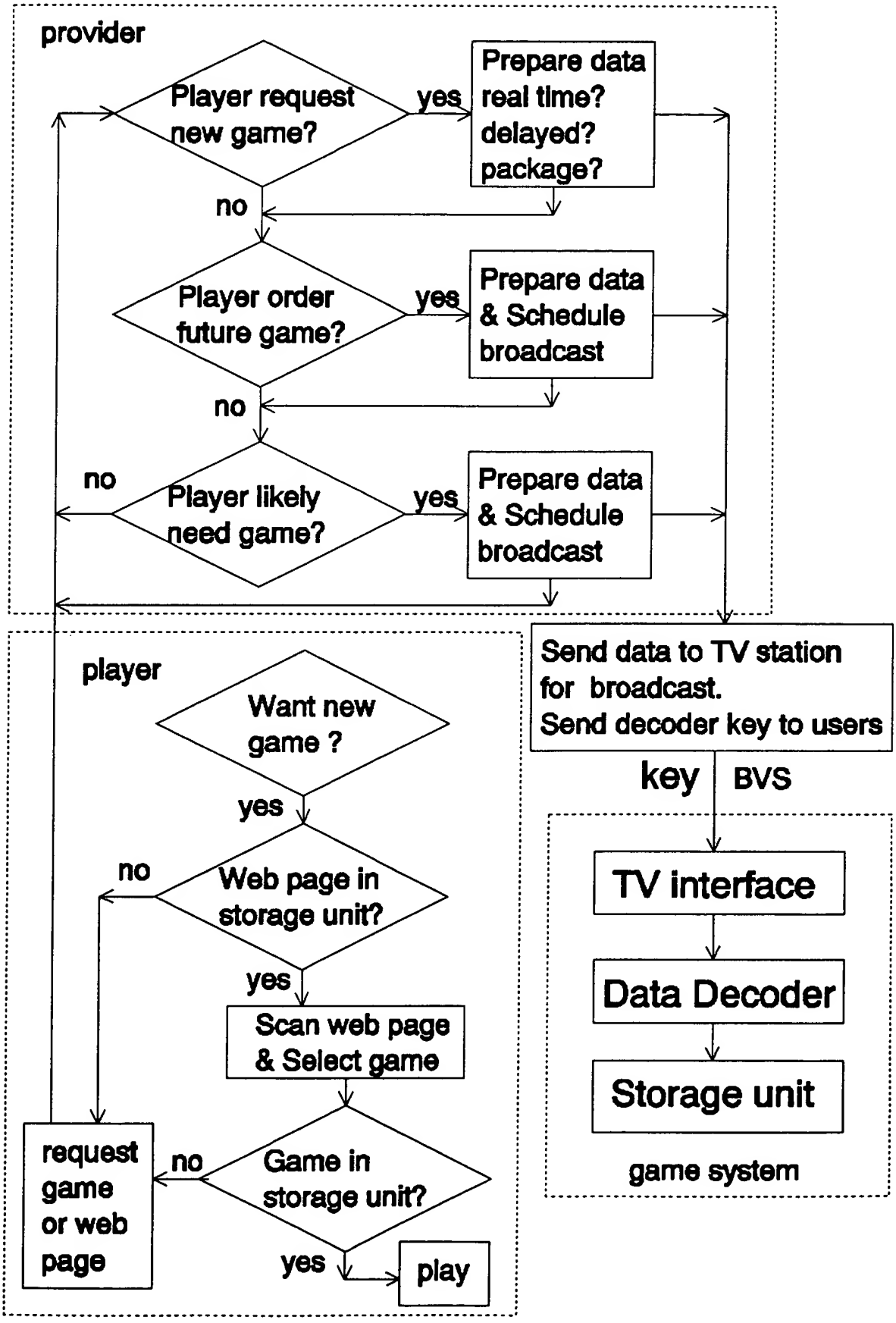
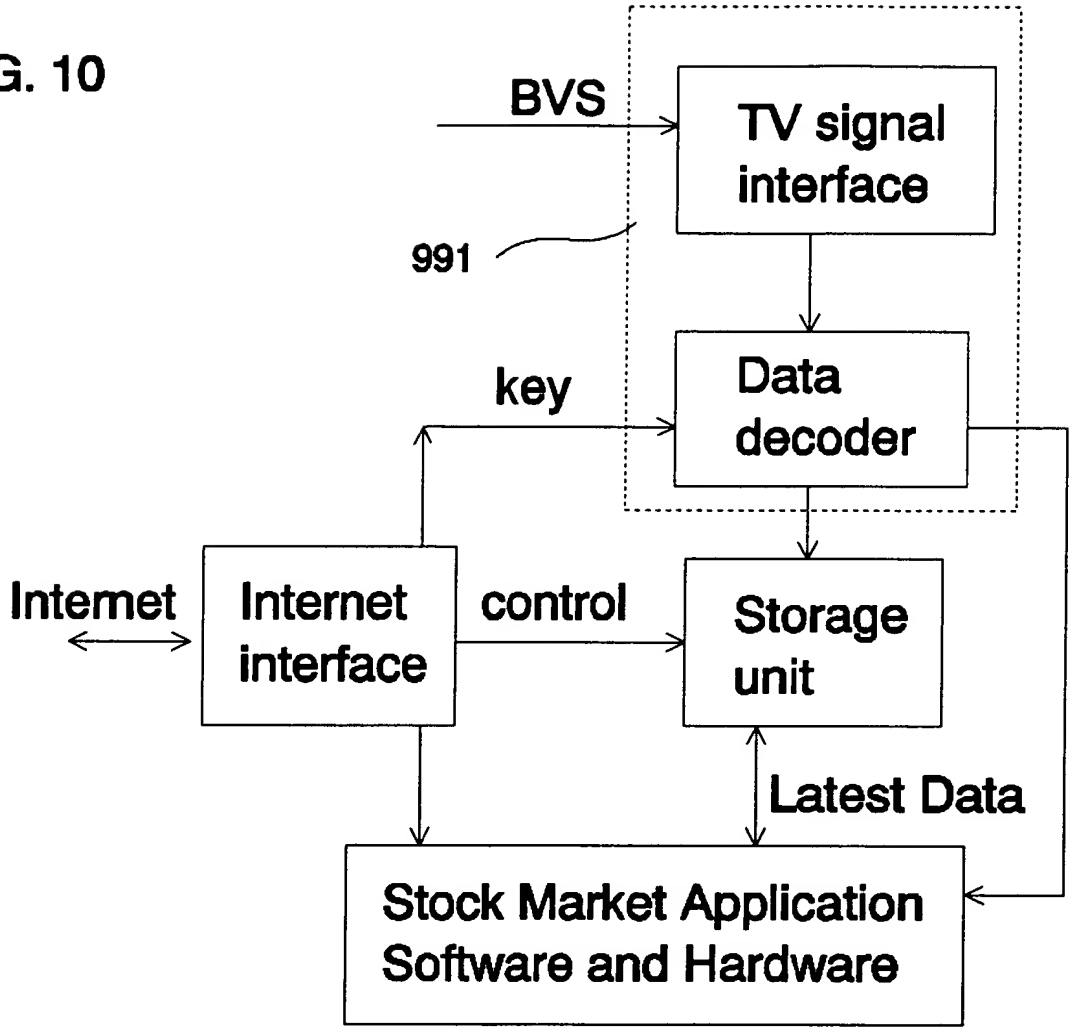

provider
Player request new game?
yes
Prepare data real time? delayed? package?
no
Player order future game?
yes
Prepare data & Schedule broadcast
no
Player likely need game?
no
yes
Prepare data & Schedule broadcast
player
Want new game ?
yes
Web page in storage unit?
no
yes
Scan web page & Select game
Game in storage unit?
no
request game or web page
yes
play
Send data to TV station for broadcast. Send decoder key to users
key
BVS
TV interface
Data Decoder
Storage unit
game system

FIG. 10


BVS
TV signal interface
991
key
Data decoder
Internet
Internet interface
control
Storage unit
Latest Data
Stock Market Application Software and Hardware